

# Deep representations and exploiting the structure of the data

© 2019 Philipp Krähenbühl and Chao-Yuan Wu

# Structure of input data

- Images
- Repeating patterns
- at various scales



7x7 patches



# Structure of convolutional networks

- Exploit repeating structure of images



Conv 7x7

Conv 3x3

Conv 3x3



Conv 3x3



Network Dissection: Quantifying Interpretability of Deep Visual Representations, D. Bau et al, CVPR 2017



# What do networks learn?



# Linear layered networks do not work well on images

- Largest linear network for computer vision
- Locally connected

